Tate & Lyle Ingredients Americas LLC
Aroostook County
Houlton, Maine
A-64-71-L-M (SM)

Departmental
Findings of Fact and Order
Air Emission License
Amendment #1

After review of the air emissions license amendment application, staff investigation reports and other documents in the applicant's file in the Bureau of Air Quality, pursuant to 38 M.R.S.A., §344 and §590, the Department finds the following facts:

I. REGISTRATION

A. Introduction

Tate & Lyle Ingredients Americas LLC (Tate & Lyle) was issued Air Emission License A-64-71-K-R/A on August 18, 2010, permitting the operation of emission sources associated with their starch manufacturing facility.

Tate & Lyle has requested a minor revision to their license in order to replace an existing transfer cyclone with a new baghouse in the plant's Dextrin Starch Conveying System. The license has also been revised to correct the pollution control equipment associated with the #14, Dextrin Packout Bulk Rail Car equipment from a fabric filter to a baghouse.

The equipment addressed in this license is located at 48 Morningstar Road, Houlton, Maine.

B. Emission Equipment

The following equipment is addressed in this air emission license:

Process Equipment

Equipment	Production Rate	Pollution Control Equipment	Stack #
#13, Dextrin Fluidizing Air Separation	2000 lb/hr starch-dextrin	Baghouse	12
#23, Dextrin Starch Conveying System	2000 lb/hr starch-dextrin	** Baghouse	21
#14, Dextrin Packout Bulk Rail Car	4000 lb/hr starch-dextrin	Baghouse	13

** Denotes new equipment

C. Application Classification

This amendment will increase emissions by less than 4 ton/year for each single pollutant and less than 8 ton/year for all pollutants combined. Therefore, this modification is determined to be a minor revision and has been processed as such.

II. BEST PRACTICAL TREATMENT (BPT)

A. Introduction

In order to receive a license, the applicant must control emissions from each unit to a level considered by the Department to represent Best Practical Treatment (BPT), as defined in *Definitions Regulation*, 06-096 CMR 100 (as amended). Separate control requirement categories exist for new and existing equipment as well as for those sources located in designated non-attainment areas.

BPT for new sources and modifications requires a demonstration that emissions are receiving Best Available Control Technology (BACT), as defined in *Definitions Regulation*, 06-096 CMR 100 (as amended). BACT is a top-down approach to selecting air emission controls considering economic, environmental and energy impacts.

BPT for existing emissions equipment means that method which controls or reduces emissions to the lowest possible level considering:

- the existing state of technology;
- the effectiveness of available alternatives for reducing emissions from the source being considered; and
- the economic feasibility for the type of establishment involved.

B. Amendment Description

1. Dextrin Starch Conveying System Baghouse

Tate & Lyle will install and operate a new baghouse to replace an existing transfer cyclone in their Dextrin Starch Conveying System. Currently, dextrin-starch is passed through the cyclone and the product collected is then transferred to the Dextrin Fluidizer. The exhaust from the cyclone emits directly into an existing baghouse associated with the Dextrin Fluidizer. Once installed, the new baghouse will serve the same purpose as the cyclone except it will be exhausted to the atmosphere rather than into the Dextrin Fluidizer baghouse. By venting to the atmosphere, Tate & Lyle will create a new emission point, designated to be Stack #21, which is 45-feet tall and has a 0.33-foot diameter.

Based on the information provided in the amendment application of the grain loading rate and exhaust gas flow rate, the expected particulate matter (PM) emissions is less than 0.5 tons per year (TPY). Tate & Lyle will comply with visible emission standards for emissions from the new baghouse.

2. Dextrin Fluidizer Baghouse

The new baghouse to be installed includes a fan to pull air through the fabric filters to the outside atmosphere. The new fan will pull air outward in the opposite direction than the following Dextrin Fluidizer baghouse fan. To counteract this opposing pull or negative pressure exerted on the Dextrin Fluidizer fan, the existing fan will need to increase its speed to properly pull materials through the baghouse and allow air to exhaust. This will result in an increase in the exhaust gas flow rate from Stack #12 from the existing Dextrin Fluidizer baghouse.

Based on the information provided in the amendment application of the grain loading rate and the new exhaust gas flow rate, the expected PM emissions is less than a 0.5 TPY increase from current estimated emissions. Tate & Lyle shall continue to comply with visible emission standards for emissions from the Dextrin Fluidizer baghouse.

C. Process Emissions – Particulate Matter (PM)

Tate & Lyle generates PM emissions during operation of the Dextrin Starch Conveyor and Dextrin Fluidizer Air Separation systems. BPT/BACT for PM emissions is met by controlling the process sources with baghouses which have control efficiencies greater than 99%.

BPT/ BACT for PM emissions from the process sources is the following:

1. PM emissions from #13 Dextrin Fluidizing Air Separation, #14 Dextrin Packout Bulk Rail Car and #23 Dextrin- Starch Conveying System shall be controlled by venting emissions through baghouses.

2. Visible emission from each baghouse shall not exceed 10% opacity on a 6-minute block average basis, except for no more than one 6-minute block average in a 1-hour period. Tate & Lyle shall take corrective action if visible emissions from the baghouse exceed 5% opacity.

D. Annual Emissions

1. Total Annual Emissions

Tate & Lyle will have no change in annual emissions due to this amendment and therefore shall continue to be restricted to the following annual emissions, based on current license A-64-71-K-R/A.

Total Licensed Annual Emissions for the Facility
Tons/year
(used to calculate the annual license fee)

	PM	PM_{10}	SO_2	NO_x	CO	VOC	HAP
Boilers #2 & #3	18.0	18.0	--[1]	44.4	4.0	0.3	--
Generator #1	0.1	0.1	--[1]	0.7	0.2	0.1	--
A, B, C, D & E Reactors and Starch Modification	--	--	--	--	--	9.9	9.9
Tapioca Storage Bin	0.8	0.8	--	--	--	--	--
Total TPY	**18.9**	**18.9**	**99.9[1]**	**45.1**	**4.2**	**10.3**	**9.9**

[1]Unit SO_2 ton/year emissions vary due to variable sulfur contents of fuels being fired. Total emissions are limited to 99.9 tons/year.

2. Greenhouse Gases

Greenhouse gases are considered regulated pollutants as of January 2, 2011, through 'Tailoring' revisions made to EPA's *Approval and Promulgation of Implementation Plans,* 40 CFR Part 52, Subpart A, §52.21 Prevention of Significant Deterioration of Air Quality rule. Greenhouse gases, as defined in 06-096 CMR 100 (as amended), are the aggregate group of the following gases: Carbon dioxide, nitrous oxide, methane, hydrofluorocarbons, perfluorocarbons, and sulfur hexafluoride. For licensing purposes, greenhouse gases (GHG) are calculated and reported as carbon dioxide equivalents (CO_2e).

Based on the facility's fuel use limit(s), the worst case emission factors from AP-42, IPCC (Intergovernmental Panel on Climate Change), and *Mandatory Greenhouse Gas Reporting*, 40 CFR Part 98, and the global warming potentials contained in 40 CFR Part 98, Tate & Lyle is below the major source threshold of 100,000 tons of CO_2e per year. Therefore, no additional licensing requirements are needed to address GHG emissions at this time.

III. AMBIENT AIR QUALITY ANALYSIS

According to 06-096 CMR 115, the level of air quality analyses required for a minor new source shall be determined on a case-by case basis. Based on the information available in the file and the similarity to existing sources, Maine Ambient Air Quality Standards (MAAQS) will not be violated by this source.

ORDER

Based on the above Findings and subject to conditions listed below, the Department concludes that the emissions from this source:

- will receive Best Practical Treatment,
- will not violate applicable emission standards, and
- will not violate applicable ambient air quality standards in conjunction with emissions from other sources.

The Department hereby grants Air Emission License A-64-71-L-M subject to the conditions found in Air Emission License A-64-71-K-R/A and the following conditions.

Severability. The invalidity or unenforceability of any provision, or part thereof, of this License shall not affect the remainder of the provision or any other provisions. This License shall be construed and enforced in all respects as if such invalid or unenforceable provision or part thereof had been omitted.

SPECIFIC CONDITIONS

The following shall replace Condition (18)(ii)(a) in License A-64-71-K- R/A.

(18) **Process Sources**

(ii) PM Process Emissions

(a) Tate & Lyle shall operate and maintain baghouses for particulate matter control on the following:

- Unit #3, Pneumatic Conveying for #1, #2, #3, #4 Starch Drum Dryer;
- Unit #4, Pneumatic Conveying for 2nd Drums and Drum Grinder;
- Unit #5, Pneumatic Conveying for the Drum Grinder;
- Unit #6, Pneumatic Conveying, for the Drum Grinder;
- Unit #7, Pneumatic Conveying for the Flash Dryer to Packer;
- Unit #9, Flash Dryer Process Aspiration;
- Unit #12, Pneumatic Conveying for the Dextrin Blender to Packer;
- Unit #13, Dextrin Fluidizing Air Separation; and,
- Unit #23, Dextrin Starch Conveying System

[MEDEP 06-096 CMR 115, BACT/BPT]

DONE AND DATED IN AUGUSTA, MAINE THIS 14 DAY OF November , 2012.

DEPARTMENT OF ENVIRONMENTAL PROTECTION

BY: Marc Allen Robert Cone for
PATRICIA W. AHO, COMMISSIONER

The term of this amendment shall be concurrent with the term of Air Emission License A-64-71-K-R/A.

PLEASE NOTE ATTACHED SHEET FOR GUIDANCE ON APPEAL PROCEDURES

Date of initial receipt of application: 7/30/12
Date of application acceptance: 8/8/12

Date filed with the Board of Environmental Protection:

This Order prepared by Allison M. Hazard, Bureau of Air Quality.